

What is claimed is:

1. A roll-handling apparatus for removing a remnant of a first roll and placing a subsequent roll, the subsequent roll having a radius of about R, the apparatus comprising:
 - a) a dump cradle capable of transitioning between a roll-support position and a roll-release position,
 - b) a roll-transfer surface comprising an extension element capable of transitioning from a retracted position to an extended position, the roll-transfer surface capable of receiving the remnant of the first roll from the dump cradle, and transferring the remnant to the extended position,
 - c) a roll-delivery element capable of carrying and placing the subsequent roll in the dump cradle and of removing the remnant from a remnant removal position.
2. The roll-handling apparatus of claim 1 further comprising a roll engaging element capable of releasably engaging the remnant of the first roll.
3. The roll-handling apparatus according to claim 2 wherein the remnant comprises an ejector.
4. The roll-handling apparatus according to claim 1 further comprising a trolley capable of transitioning between a roll-loading position and a roll-unwinding position.
5. The roll-handling apparatus according to claim 1 wherein the retracted position of the extension element is disposed less than the radius R from the dump cradle, and the extended position of the extension element is disposed more than the radius R from the dump cradle.
6. The roll-handling apparatus according to claim 1 further comprising a position sensor selected from the group consisting of: a dump-cradle sensor, a roll-delivery-element sensor, an extension-element sensor, and combinations thereof.

7. The roll-handling apparatus according to claim 1 further comprising an extension-element end effector capable of transitioning the extension element between the retracted position and the extended position.

8. The roll-handling apparatus according to claim 1 further comprising a dump-cradle end effector capable of transitioning the dump cradle between the roll-support position and the roll-release position.

9. A roll-handling apparatus comprising:

a) a roll-unwinding station capable of accepting web material unwound from a roll, the roll having an initial radius of about R ,

b) a roll-loading station capable of receiving a roll to be unwound,

c) a roll-delivery element capable of removing a remnant of a roll from a remnant-removal position, of providing a roll at the roll-loading station and of placing the roll in a dump cradle,

d) a trolley capable of transitioning between the roll-unwinding station and the roll-loading station, the trolley comprising:

i) the dump cradle capable of transitioning between a roll-support position and a roll-release position,

ii) a roll-transport surface comprising an extension element capable of transitioning from a retracted position to an extended position and capable of receiving the remnant from the dump cradle and transferring the remnant to the extended position.

10. The roll-handling apparatus of claim 9 further comprising a roll-engaging element capable of releasably engaging the remnant of the first roll.

11. The roll-handling apparatus according to claim 10 wherein the remnant comprises an ejector.

12. The roll-handling apparatus according to claim 9 wherein the retracted position of the extension element is disposed less than the radius R from the dump cradle, and the

extended position of the extension element is disposed more than the radius R from the dump cradle.

13. The roll-handling apparatus according to claim 9 further comprising a position sensor selected from the group consisting of: a dump-cradle position sensor, a roll-delivery-element position sensor, an extension-element position sensor, and combinations thereof.

14. The roll-handling apparatus according to claim 9 further comprising an extension-element end effector capable of transitioning the extension element between the retracted position and the extended position.

15. The roll-handling apparatus according to claim 9 further comprising a dump-cradle end effector capable of transitioning the dump cradle between the roll-support position and the roll-release position.

16. A roll-handling apparatus for unwinding rolls of web material, the apparatus comprising:

- a) a roll-unwinding station capable of accepting web material unwound from a roll, the roll having an initial radius of about R ,
- b) a first roll-loading station capable of receiving a roll of web material,
- c) a second roll-loading station capable of receiving a roll of web material,
- d) a roll-delivery element capable of providing a roll of web material to at least the first roll-loading station, of placing the roll in a dump cradle, and of removing a remnant of a roll from a roll-removal position,
- e) a trolley capable of transitioning between the first roll-loading station, the roll-unwinding station, and the second roll-loading station, the trolley comprising:
 - i) the dump cradle capable of transitioning between a roll-support position and a roll-release position,
 - ii) a roll-transport surface comprising an extension element capable of transitioning from a retracted position to an extended position, the roll-transport surface capable of receiving the remnant from the dump cradle, and transferring

the remnant to the extended position, the extended position being disposed more than the radius R away from the dump cradle.

17. The roll-handling apparatus of claim 16 further comprising a roll-engaging element capable of releasably engaging the remnant of the first roll.
18. The roll-handling apparatus according to claim 17 wherein the remnant comprises an ejector.
19. The roll-handling apparatus according to claim 16 wherein the retracted position of the extension element is disposed less than the radius R from the dump cradle, and the extended position of the extension element is disposed more than the radius R from the dump cradle.
20. The roll-handling apparatus according to claim 16 further comprising a position sensor selected from the group consisting of: a dump-cradle position sensor, a roll-delivery-element position sensor, a trolley position sensor, an extension-element position sensor and combinations thereof.